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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/085,863 | 02/27/2002 | Mark Austin | 00780 | 1668 |

45695 7590 03/09/2006

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| EXAMINER |
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NGUYEN, THUAN T

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| ART UNIT | PAPER NUMBER |
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2685

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,863

Applicant(s)

AUSTIN ET AL.

Examiner

THUAN T. NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Arguments after Telephone Interview

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn based on the outcome of the telephone interview with the applicant's representative on December 14, 2005.

Remarks

2. Claim 3 and 14-25 were previously canceled. Pending claims are claims 1-2, and 4-13 for reconsideration.

Response to Arguments

3. Applicant's arguments with respect to claims 1-2 and 4-13 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-2, and 4-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chawla et al. (U.S. Patent No. 6,496,700 B1) in view of Laroia et al.(US Patent 6,954,481 B1).

Regarding claim 1, Chawla discloses "a method of measuring frequency interference between a plurality of cell sites in a wireless telecommunications system, the method comprising: selecting a frequency in a first cell site to be used as a beacon frequency; activating

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the beacon frequency in the first cell site; recording, at a telecommunications switch, a signal strength of the beacon frequency as measured by a first wireless device operating in the first cell site and a signal strength of the beacon frequency as measured by a second wireless device operating in another cell site; and determining the frequency interference between the first cell site and the second cell site based on the signal strengths” (Figs. 2 & 3, and col. 3/lines 23-45, col. 6/lines 25-39, table 1-1 for signal strengths measured from adjacent base station cells regarding as a first and a second cell for adjacent cells, and col. 16/table 5 for C/I ratio signals for neighbor list of C/I of two adjacent cells or of the first and second cell sites).

Chawla does not further teach the step of “wherein selecting a frequency includes selecting a frequency carrying the least amount of traffic across a plurality of cell sites and protecting the frequency from carrying traffic”; however, this technique is taught by Laroia as Laroia shows in a same technique and apparatus for including the adjustment and optimization of mobile networks by using a frequency planning tool to select a pilot tone frequency from a cell site to be used as a beacon frequency in an area denoted as low traffic load due to the detection of phantom tones (Fig. 3 and col. 2/line 51 to col. 3/line 18 for pilot tone or beacon frequency generated; and col. 5/lines 14-39 for the detection of phantom tones, and phantom tones or phantom frequency are referred to a frequency carrying the least amount of traffic across a plurality of cell sites and protecting the frequency from carrying traffic because phantom frequency are not the frequency for transmission/carrying traffic). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chawla’s system with Laroia’s disclosed technique in order to provide an enhanced method and apparatus for measuring frequency interference using a beacon frequency/a pilot signal within an

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area of least amount of traffic across a plurality of cells and also protecting the frequency from carrying traffic as noted.

As for claims 2 and 8, Chawla discloses “wherein the first and second cell sites are adjacent cell sites” (Fig. 1 & 2), and further “comprising removing the beacon frequency from availability for use in the system by wireless device users”, i.e., beacon frequency is simply a test signal, and it can be removed from availability for use in the system (Chawla, col. 6/lines 25-39).

As for claim 4, Chawla discloses “wherein measuring the frequency interference includes constructing a carrier/interference matrix” (col. 4/lines 49-54; and Table 5 in col. 16 shows a C/I matrix).

As for claim 5, Chawla discloses further “comprising de-activating the beacon frequency after the signal strengths are recorded”, i.e., beacon frequency just being activated for a period of time, and as soon as measurements are recorded or collected by the base station in the matrix from as disclosed above, the beacon frequency are not used or activated (refer to col. 15/lines 1-29).

As for claims 6 and 7, Chawla shows “wherein selecting a frequency includes selecting a guard frequency” (col. 6/lines 24-39); and the least used or frequency carrying the least amount of traffic are addressed earlier in claim 1 in view of Clarkson.

As for claim 9, Chawla discloses further “comprising repeating the method for all cell sites in the telecommunications system” (Fig. 3 for procedures in frequency reuse scheme in the telecommunication system, see col. 16/line 26 to col. 18/line 64 for the procedure repeats as necessary).

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As for claims 10 and 11, Chawla further discloses “comprising adding the beacon frequency to a list of frequencies” and “wherein adding the beacon frequency to a list of frequencies includes adding the beacon frequency to a mobile assisted handoff (MAHO) list in a telecommunications switch” (col. 6/lines 4-39).

As for claim 12, Chawla shows further “comprising determining whether the first cell site and the second cell site may be selected for frequency re-use based on determining the frequency interference” (col. 3/lines 22-45 for neighbor list and reuse the same or adjacent channels regarding as the first and the second cell sites within the neighbor cells list).

As for claim 13, Chawla further shows “comprising selecting a trigger frequency to simulate a hand-off situation for the second wireless device” (col. 19/line 65 to col. 20/line 13 for selecting a quality frequency for handoff as suggested in col. 6, lines 4-23 for MAHO).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Forrest and Binder (PTO-892 attached) disclose systems related to perform adjustment in frequency interference using phantom frequency.

7. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to the New Central Fax number:

(571) 273-8300, (for Technology Center 2600 only)

Hand deliveries must be made to Customer Service Window,
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Thuan Nguyen whose telephone number is (571) 272-7895. The examiner can normally be reached on Monday-Friday from 9:30 AM to 7:00 PM, with alternate Fridays off.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TONY T. NGUYEN
PATENT EXAMINER

Tony T. Nguyen
Art Unit 2685
February 28, 2006